

RV *Investigator* technical profile

RESEARCH VESSEL	Multi-purpose
LENGTH OVERALL	93.9 m
BEAM	18.5 m
DRAFT	5.7 m
LLOYDS CLASSIFICATION	+100A1, +LMC, UMS, Ice 1c, IWS, EP, Research Vessel, DP (AM), DnV Silent R
CREW	18 TBC
SCIENCE COMPLEMENT	40
DNV SILENT-R	The RV <i>Investigator</i> will operate with low levels of radiated noise to allow for enhanced science operations
MAIN ENGINES	3 diesel generators
CAPACITIES	Fuel oil 900 tonnes, fresh water 250 tonnes, fresh water evaporator up to 2 x 15 t/day
ENDURANCE	60 days
ELECTRICAL SUPPLY	690VAC, 415VAC and 240VAC cycle. Full uninterruptable power supply
PROPULSION	Two reversible electric propulsion motors driving two slow speed fixed pitch propellers
DYNAMIC POSITIONING	DP1 (AM) which allows the vessel to hold station within defined limits
BOW THRUSTER	Retractable 1000kW
WINCHES	A large suite of scientific winches are available for conducting trawling, fishing, coring, CTD, hydrographic, and towed body operations.
NAVIGATIONAL EQUIPMENT	A full range of navigational equipment will be employed on the RV <i>Investigator</i> in accordance with Australian and International standards.
RADAR EQUIPMENT	A full range of radar equipment will be employed on the RV <i>Investigator</i> in accordance with Australian and International standards.
ECHO SOUNDER	Along with normal navigational echo sounders, a comprehensive suite of advanced echosounders including seafloor mapping sonars, will be employed.
COMMUNICATIONS	VSAT, Inmarsat Fleet Broadband voice/fax/data. Iridium ship-to-shore communications system voice/data. NextG phone, Satcom C (GMDSS compliant), HF/MF and VHF radios, weather fax.

Research achievements worth building on

Research voyages of the Marine National Facility Research Vessel *Southern Surveyor* have:

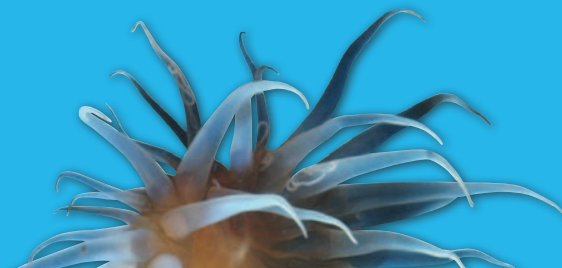
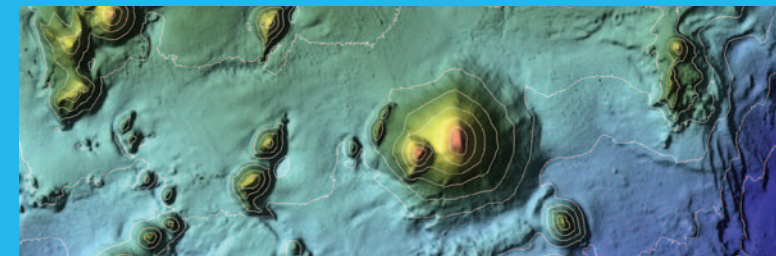
- ♦ discovered massive submarine volcanoes between Fiji and Samoa, offering evidence of mineral deposits such as copper, zinc and lead;
- ♦ examined climate records from ancient corals and produced a carbon chemistry map of the Great Barrier Reef region;
- ♦ investigated the dynamics of tuna fishery ecosystems off eastern Australia and assessed the size and location of marine protected areas in the Great Australian Bight; and
- ♦ discovered, assessed and mapped Australia's unique marine biodiversity.

FOR FURTHER INFORMATION

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Marine National Facility

Future Research Vessel Project



In May 2009, the Australian Government dedicated \$120 million for a new ocean-going research vessel to replace the present Marine National Facility Research Vessel *Southern Surveyor*.

The new vessel is being designed, built and commissioned by CSIRO through the Future Research Vessel Project, an initiative of the Australian Government under the Super Science Initiative and financed from the Education Investment Fund. The process will take four years, with the vessel's completion expected in 2013.

CSIRO will own and manage the new vessel. Its operation will be guided by an independent steering committee and funded by the Australian Government to support voyages mounted by Australian scientists and their overseas collaborators.

Broader scope for understanding

About 60 per cent of Australian territory is ocean, but only 12 per cent of this area has been mapped. Research is vital to the responsible development and management of the ocean, and to understanding its influence in the region and around the world.

The new, 93.9 m vessel will provide a safe and technically-advanced, mobile research platform. It will operate from the tropical north to the Antarctic ice-edge and across the Indian, Southern, and Pacific oceans, greatly improving Australia's capacity to:

- ♦ investigate, assess and develop geological resources;
- ♦ detect and predict changes in the ocean environment and their implications for weather and climate; and
- ♦ characterise and manage marine ecosystems, biodiversity and fisheries.

The shape of future voyages

The new vessel will be capable of spending 300 days a year at sea, supporting activities across a range of disciplines in oceanographic, climate, geological, fisheries and ecosystem research. Each voyage will be able to accommodate 40 scientists, and can go to sea for up to 60 days and cover 10 000 nautical miles.

The vessel's design will feature a core backbone of permanently fitted sampling, data acquisition, management, presentation and communication systems including winches, acoustic mapping and environmental monitoring devices.

Research teams will be able to add purpose-built systems to support their own investigations, such as radiation and trace metal laboratories, deep-water dredging, coring and drilling devices, fishing nets, towed camera systems and remotely operated vehicles.

Researchers also will be able to integrate vessel-acquired data with data from satellite sensors, autonomous vehicles and shore based models in real time.



Enhancing leadership in ocean research

This expansion of Australia's ocean research capacity will deliver opportunities to increase international leadership in:

- ♦ the development of exploration models for deep-earth resource location and policy and procedure for responsible marine resource extraction;
- ♦ measuring, predicting and managing the impact of climate variability and change;
- ♦ sustainable management of living marine resources through ocean zoning and ecological risk assessment; and
- ♦ innovative, non-invasive technologies to survey and monitor the marine environment.

